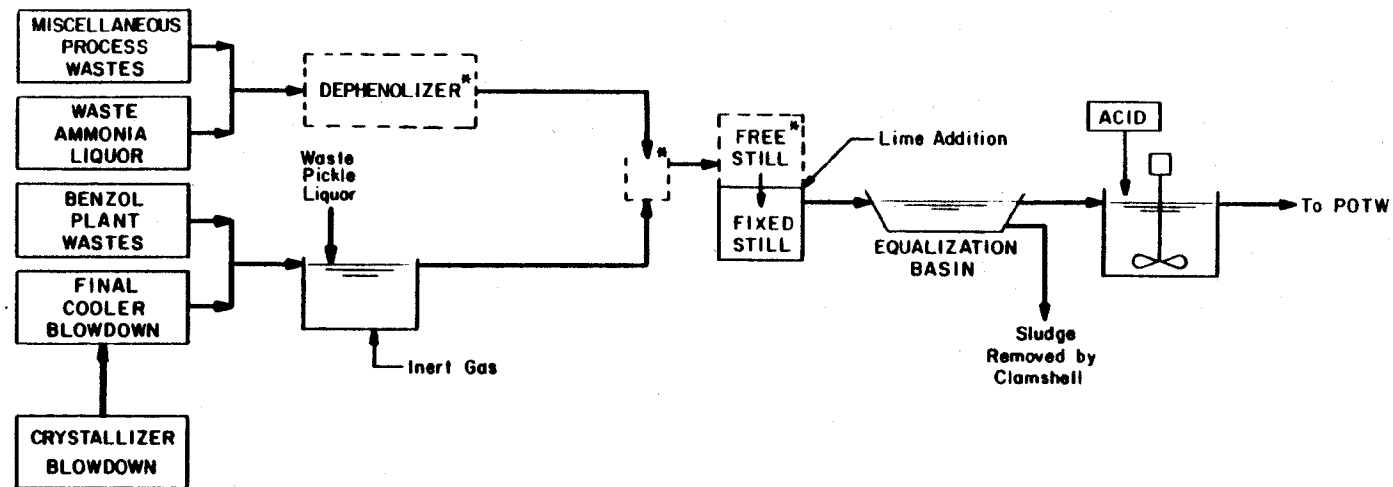


Appendix A

SCHEMATIC DIAGRAMS OF TECHNOLOGIES CONSIDERED BY EPA

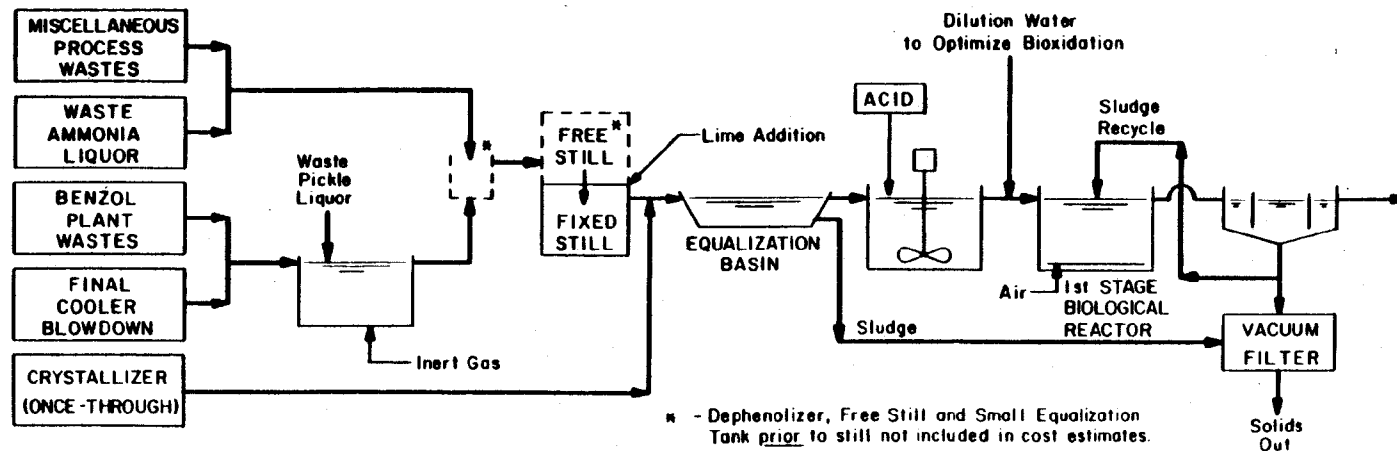
**BYPRODUCT COKEMAKING
TREATMENT MODELS SUMMARY**
(PAGE 1 OF 2)

PSES-1/ PSNS-1



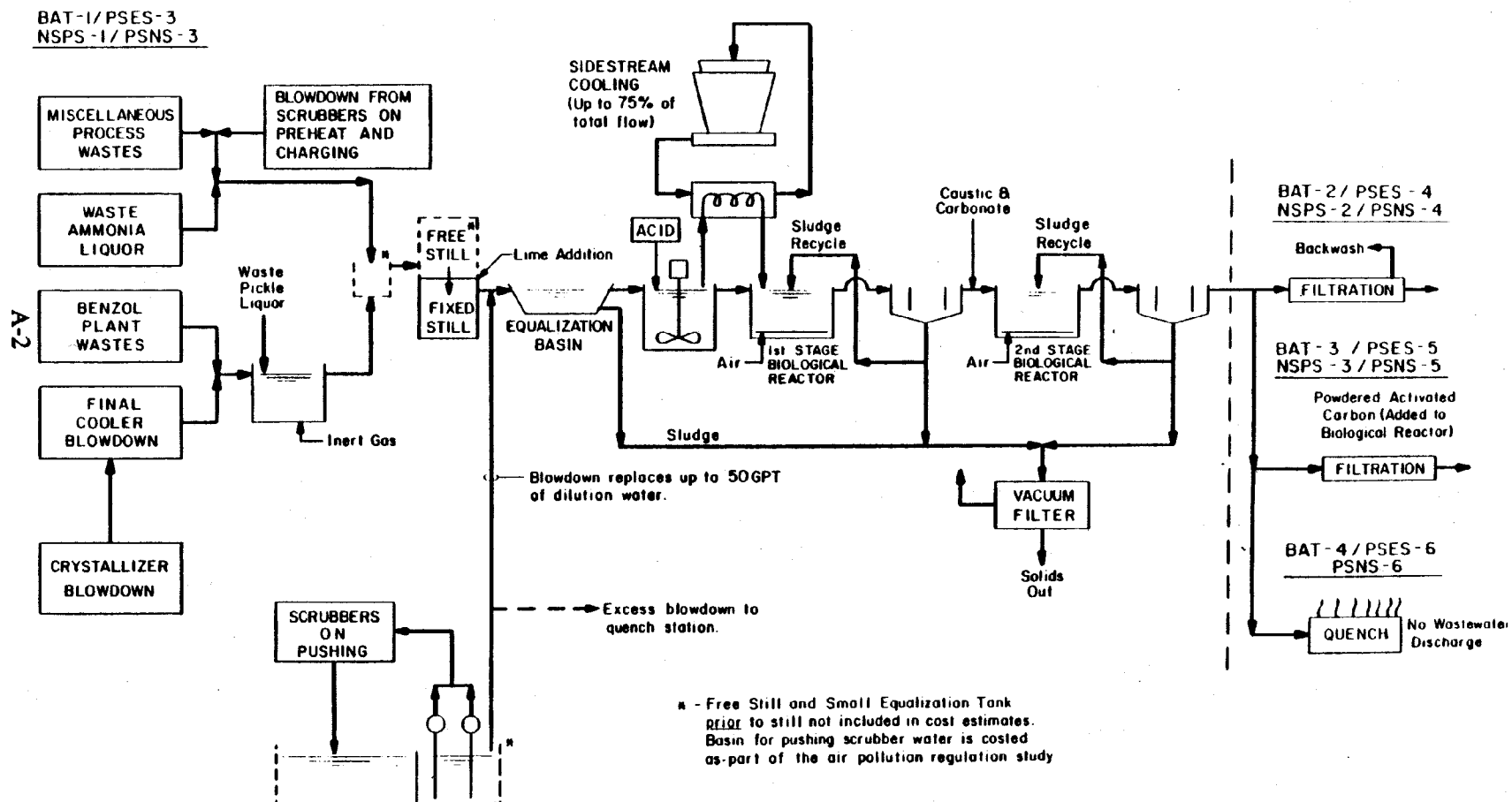
A-1

BAT/BCT/PSES-2/PSNS-2



* - Dephenolizer, Free Still and Small Equalization Tank prior to still not included in cost estimates.

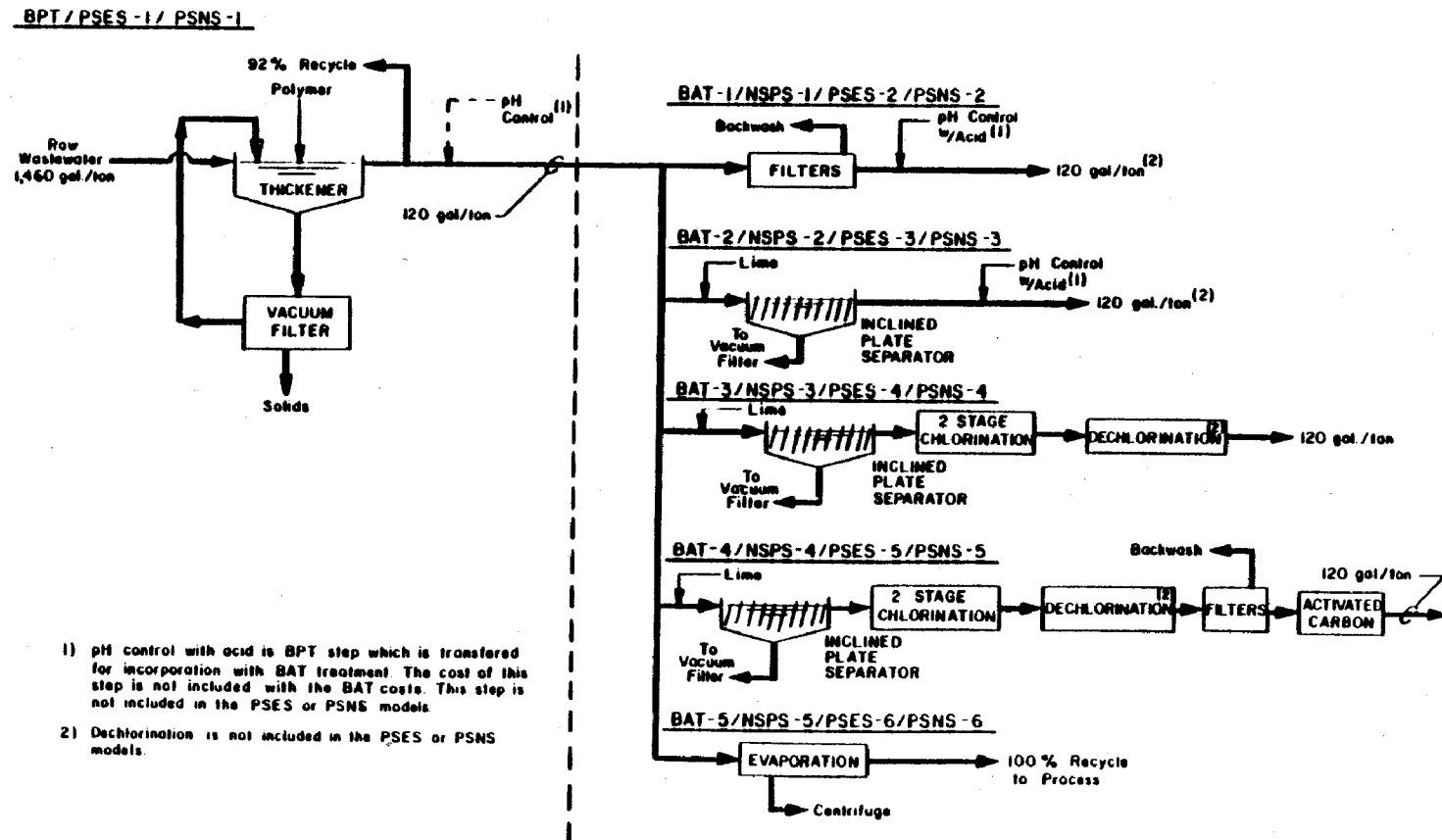
BYPRODUCT COKEMAKING
TREATMENT MODELS SUMMARY
(PAGE 2 OF 2)



SINTERING TREATMENT MODELS SUMMARY

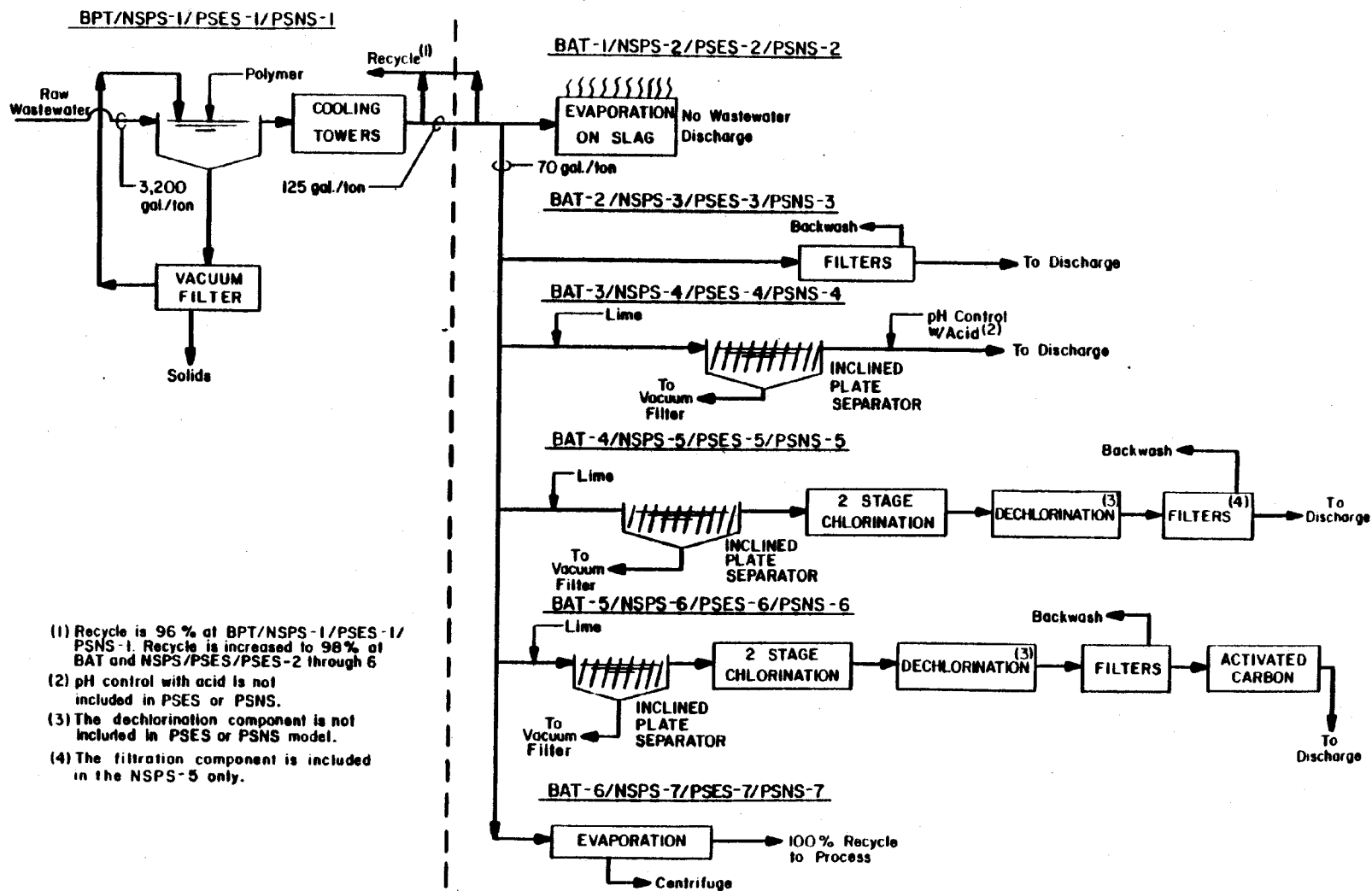
BPT, BAT, PSES MODEL PLANT - 4,000 TPD
NSPS, PSNS MODEL PLANT - 7,000 TPD

A-3



IRONMAKING TREATMENT MODELS SUMMARY

MODEL PLANT - 6000 TPD

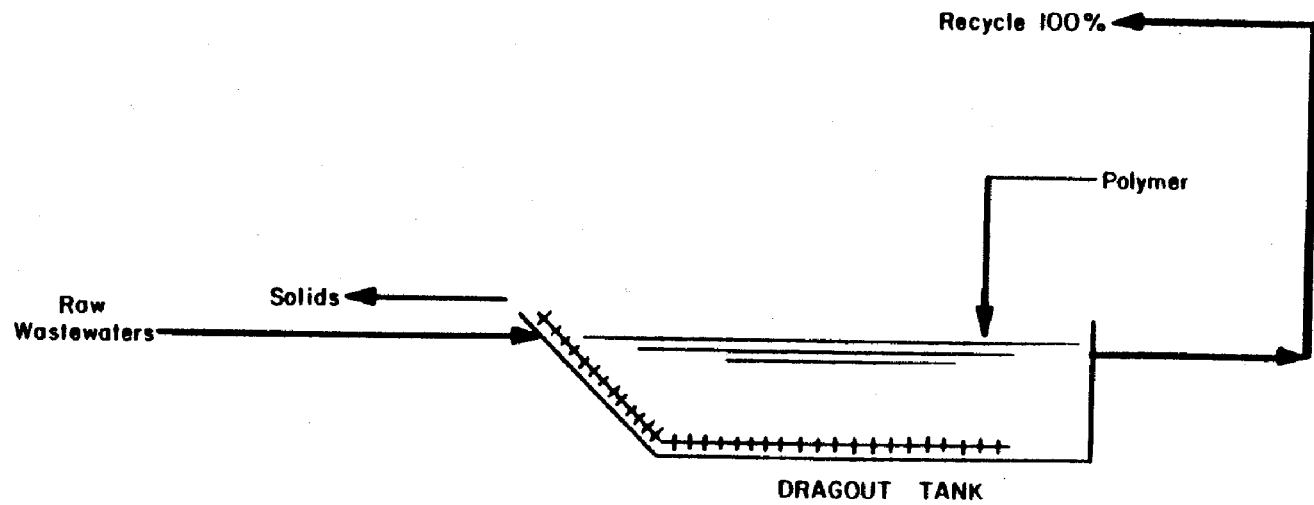


- (1) Recycle is 96 % at BPT/NSPS-1/PSES-1/PSNS-1. Recycle is increased to 98 % at BAT and NSPS/PSES/PSES-2 through 6
- (2) pH control with acid is not included in PSES or PSNS.
- (3) The dechlorination component is not included in PSES or PSNS model.
- (4) The filtration component is included in the NSPS-5 only.

BASIC OXYGEN FURNACE - SEMI-WET
TREATMENT MODELS SUMMARY

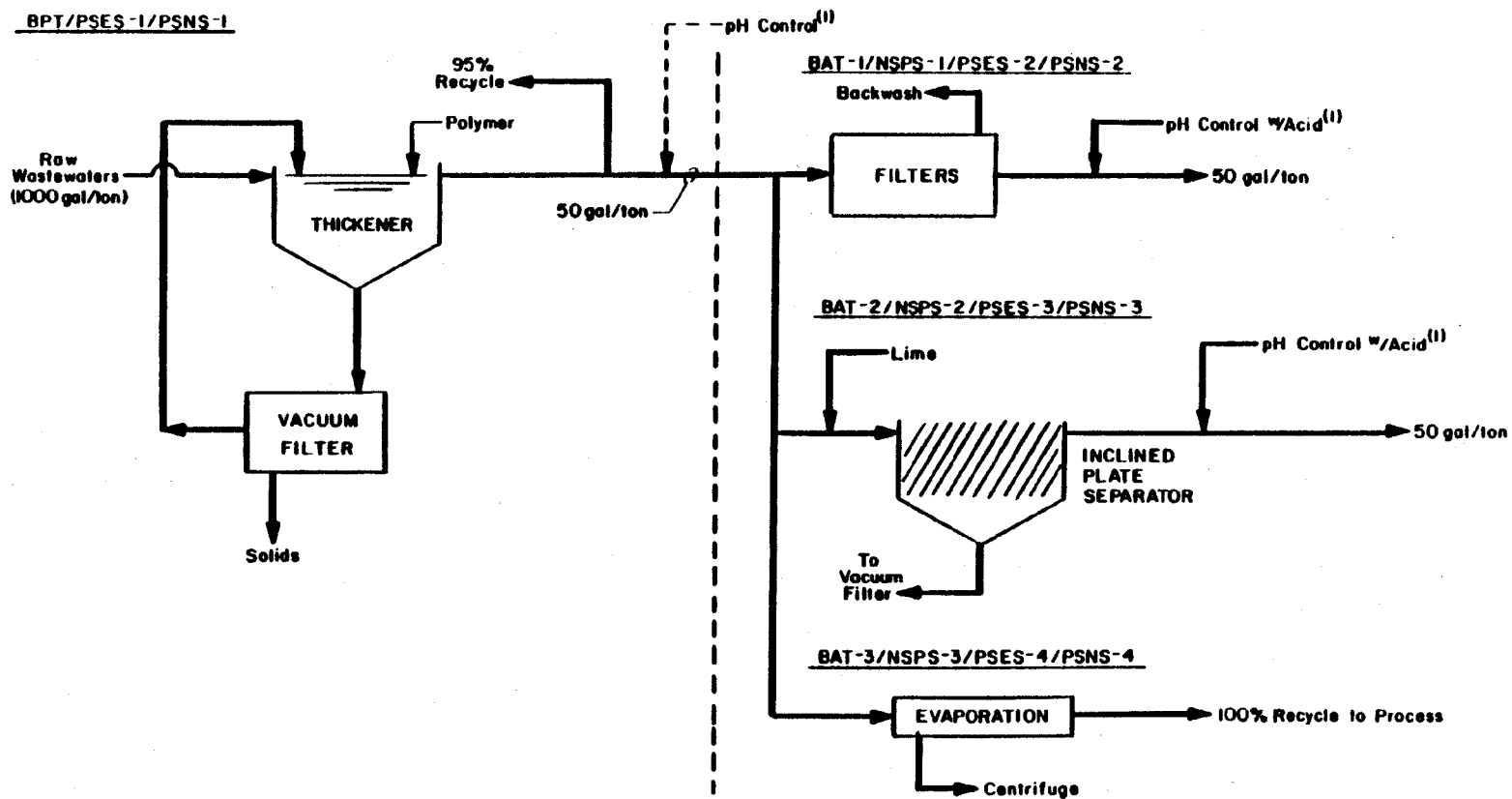
MODEL PLANT - 5300 TPD

BPT/BAT/BCT/PSES



BASIC OXYGEN FURNACE-WET-SUPPRESSED COMBUSTION TREATMENT MODELS SUMMARY

MODEL PLANT-7400 TPD

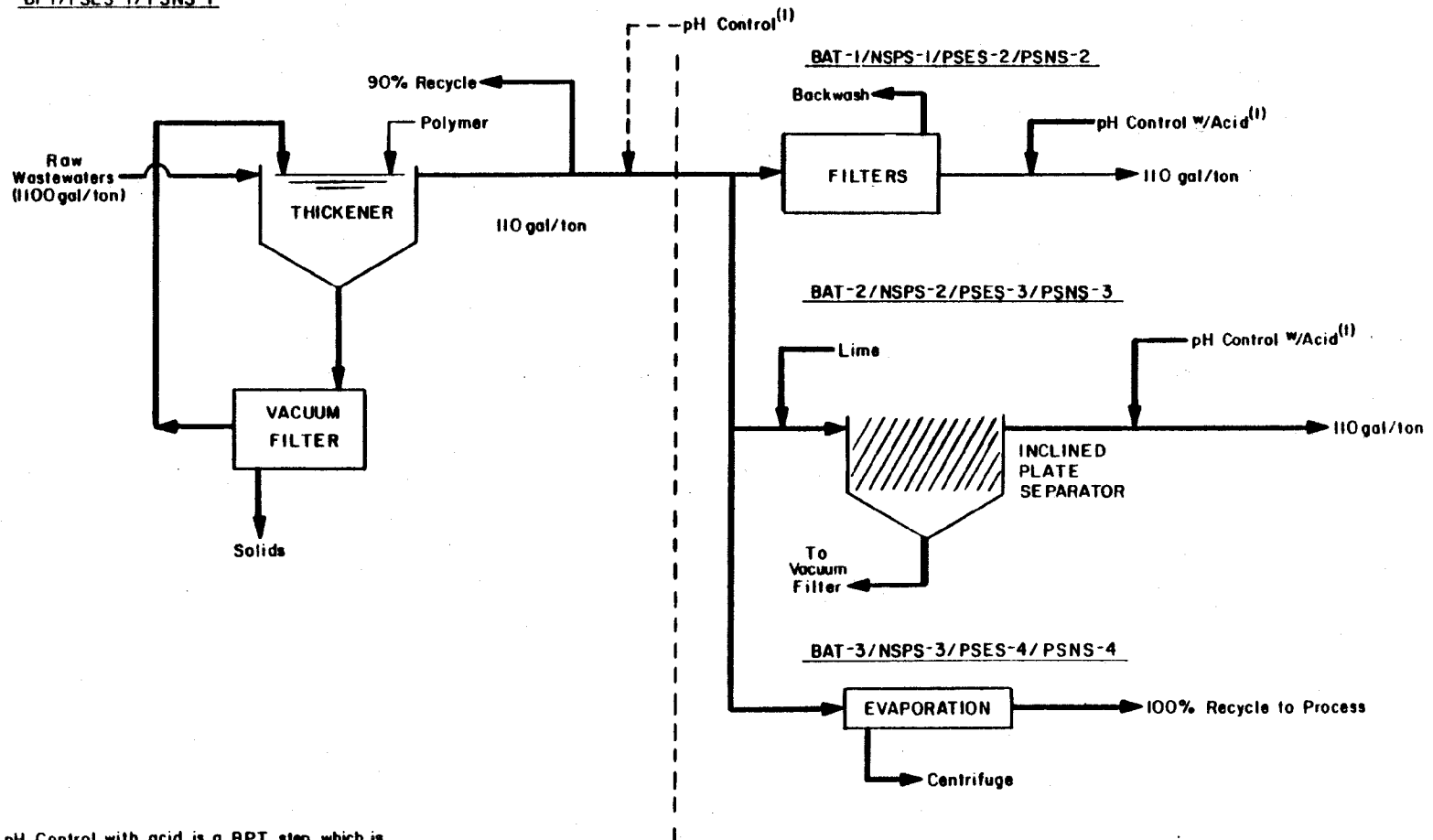


(1) pH Control with acid is a BPT step which is transferred for incorporation with BAT treatment. The cost of this step is not included with the BAT costs, nor is it included in the PSES/PSNS models.

BASIC OXYGEN FURNACE-WET-OPEN COMBUSTION TREATMENT MODELS SUMMARY

MODEL PLANT - 9100 TPD

BPT/PSES-1/PSNS-1

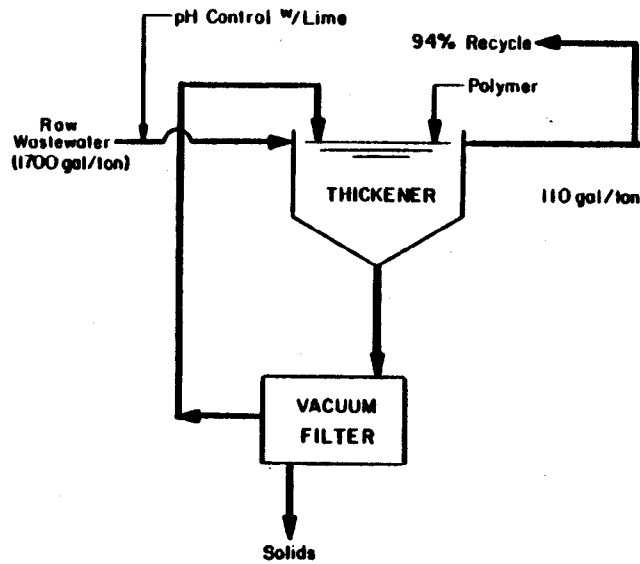


(1) pH Control with acid is a BPT step which is transferred for incorporation with BAT treatment. The cost of this step is not included with the BAT costs, nor is it included in the PSES/PSES models.

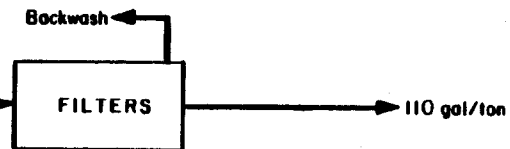
OPEN HEARTH FURNACE - WET TREATMENT MODELS SUMMARY

MODEL PLANT-6700 TPD

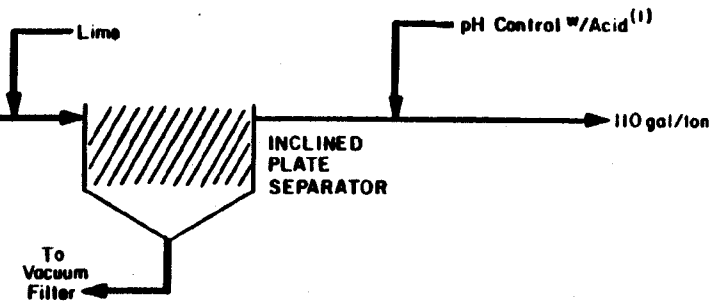
BPT/PSES-1



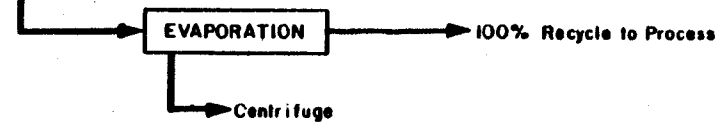
BAT-1/PSES-2



BAT-2/PSES-3



BAT-3/PSES-4

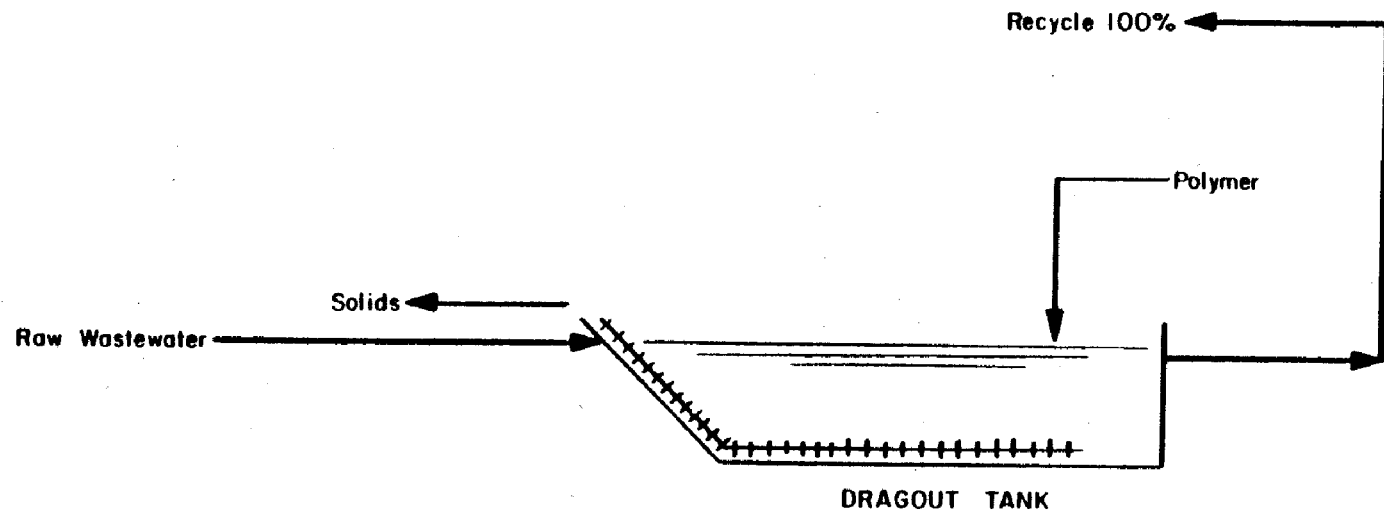


(1) pH control is not included in the PSES/PSNS models.

ELECTRIC ARC FURNACE-SEMI-WET TREATMENT MODELS SUMMARY

MODEL SIZE - 3100 TPD

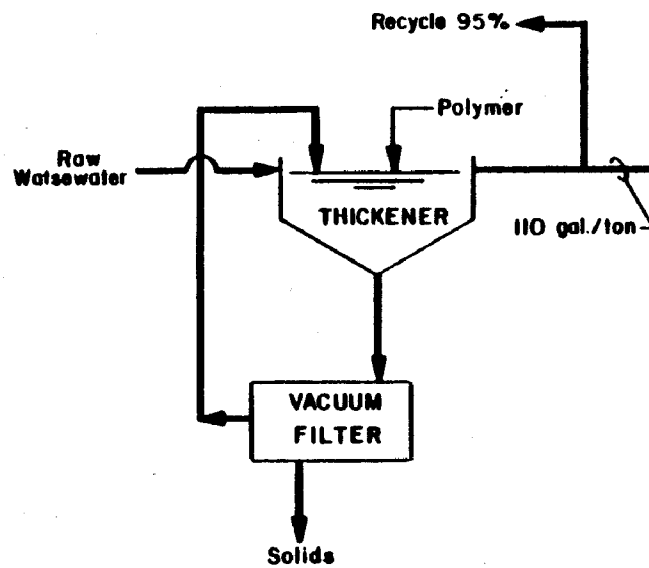
BPT/BAT/BCT/PSES



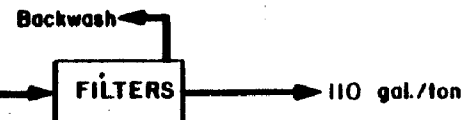
ELECTRIC ARC FURNACE - WET TREATMENT MODELS SUMMARY

MODEL PLANT - 1800 TPD

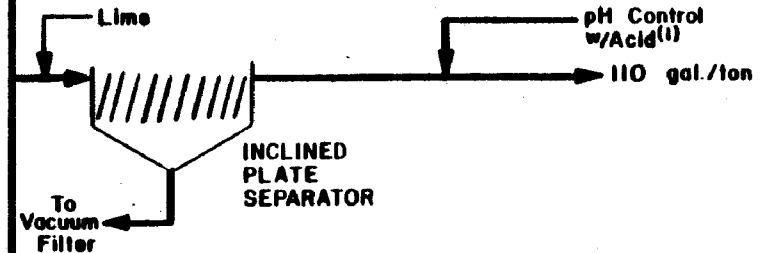
BAT/PSES-1/PSNS-1



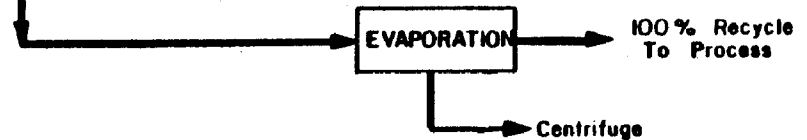
BAT-1/NSPS-1/PSES-2/PSNS-2



BAT-2/NSPS-2/PSES-3/PSNS-3



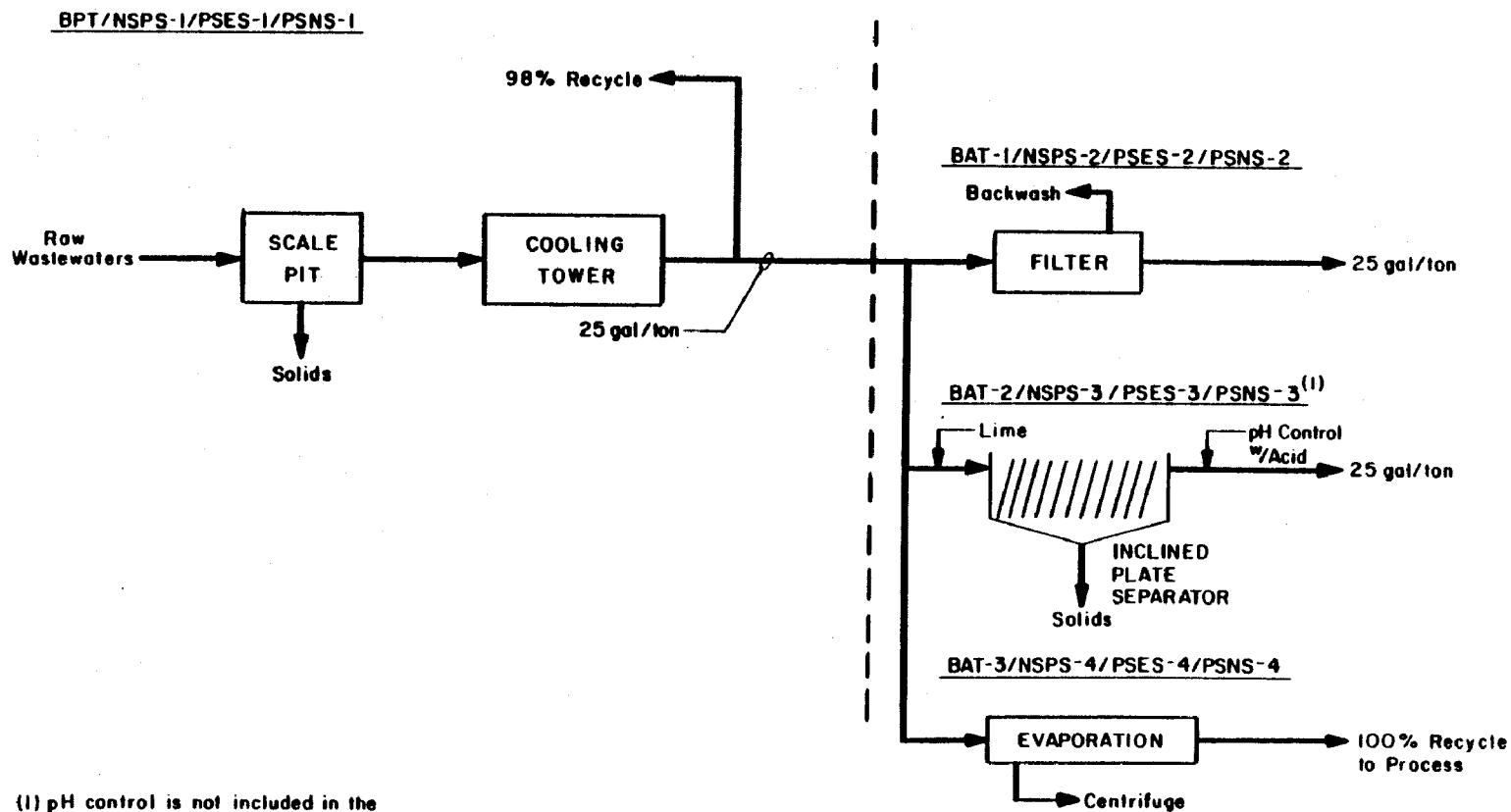
BAT-3/NSPS-3/PSES-4/PSNS-4



(1) pH control is not included in the PSES/PSNS models.

VACUUM DEGASSING TREATMENT MODELS SUMMARY

MODEL PLANT-1200 TPD

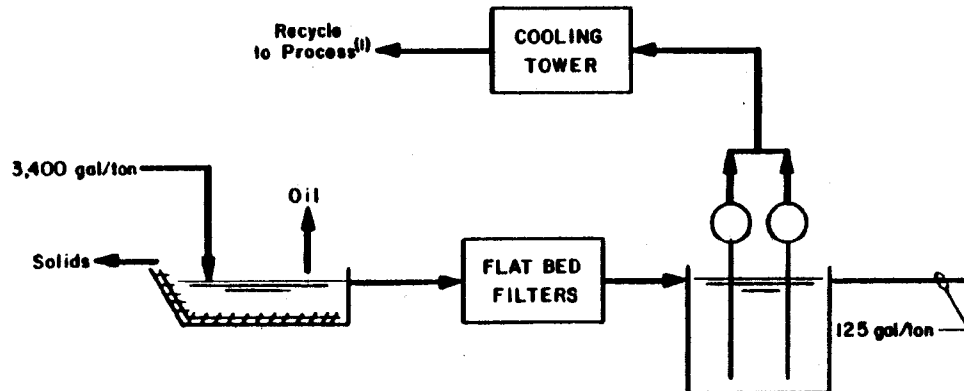


(1) pH control is not included in the PSES/PSNS models.

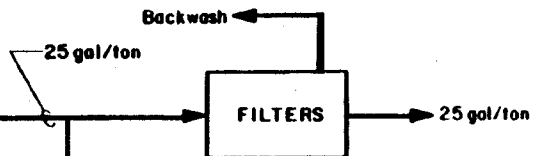
CONTINUOUS CASTING BPT/BAT/PSES TREATMENT MODELS SUMMARY

MODEL PLANT-1,400 TPD

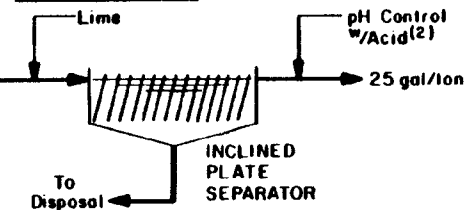
BPT/PSES-1



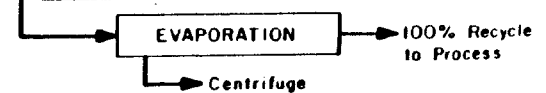
BAT-1/PSES-2



BAT-2/PSES-3



BAT-3/PSES-4

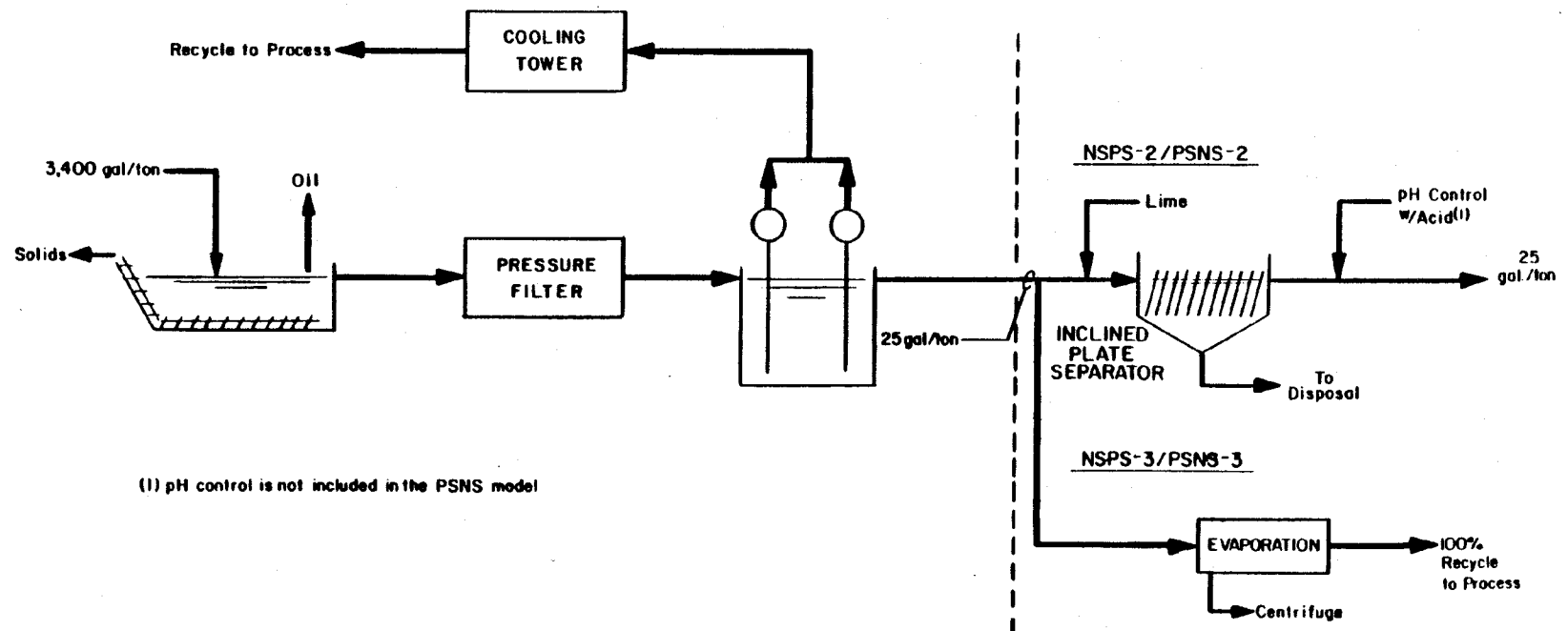


- (1) Recycle is 96.3 % at BPT.
Recycle is increased to 99.3% at BAT.
- (2)pH control is not included in the PSES model

CONTINUOUS CASTING
NSPS/PSNS
TREATMENT MODELS SUMMARY

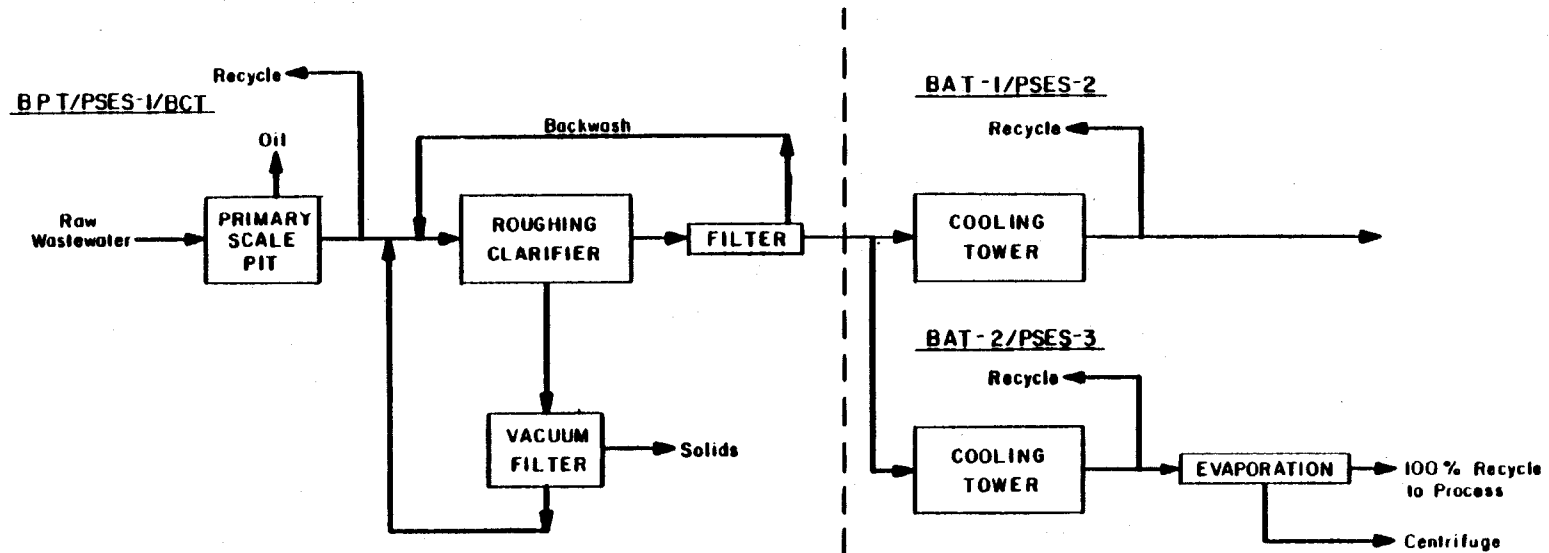
MODEL PLANT - 1,400 TPD

NSPS-1 / PSNS-1



(1) pH control is not included in the PSNS model

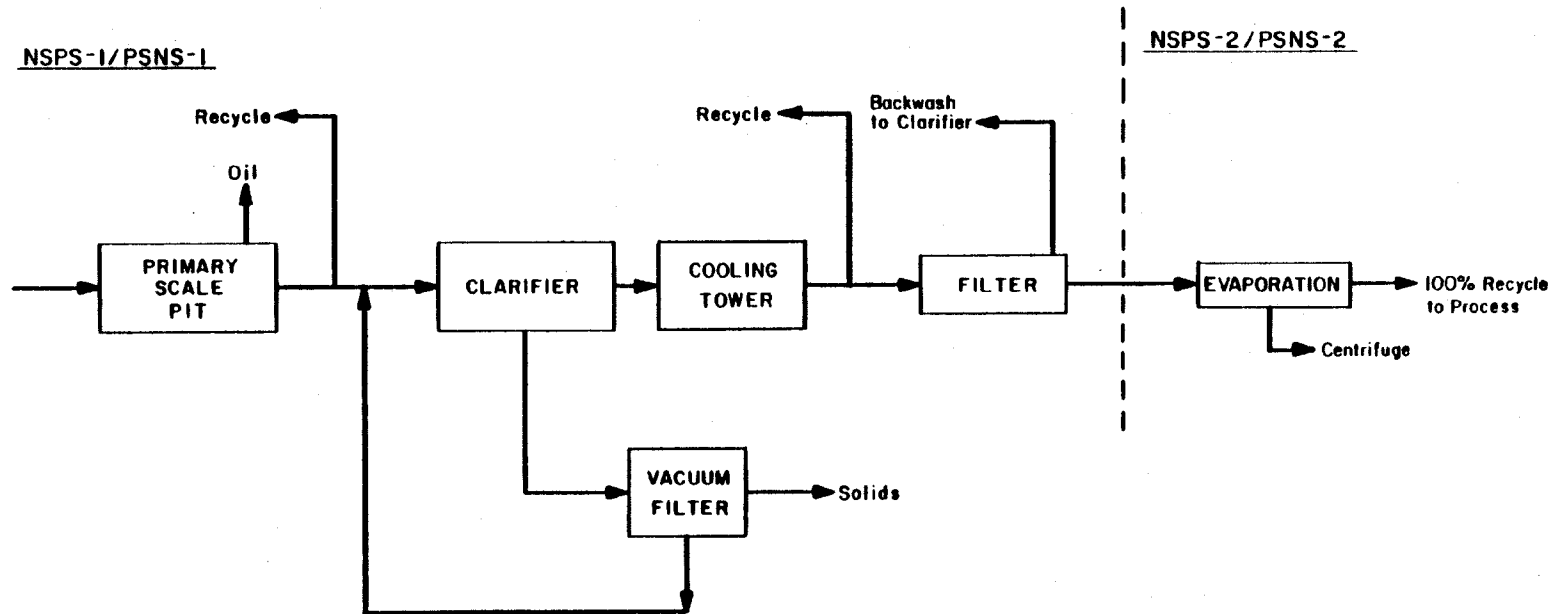
HOT FORMING BPT/BCT/BAT/PSES TREATMENT MODELS SUMMARY



HOT FORMING FLOW RATES

<u>SUBDIVISION</u>		<u>APPLIED FLOW (GPT)</u>	<u>PSP RECYCLE (%)</u>	<u>BPT DISCHARGE FLOW (GPT)</u>	<u>BAT RECYCLE (%)⁽¹⁾</u>	<u>BAT DISCHARGE FLOW (GPT)</u>
PRIMARY	wo/Scarfer	2300	61	897	35	90
	w/Scarfer	3400	61	1326	35	140
SECTION	Carbon	5100	58	2142	38	200
	Specialty	3200	58	1344	38	130
FLAT	Hot Strip	6400	60	2560	36	260
	Carbon Plate	3400	60	1360	36	140
	Specialty Plate	1500	60	600	36	60
PIPE & TUBE		5520	77	1270	19	220

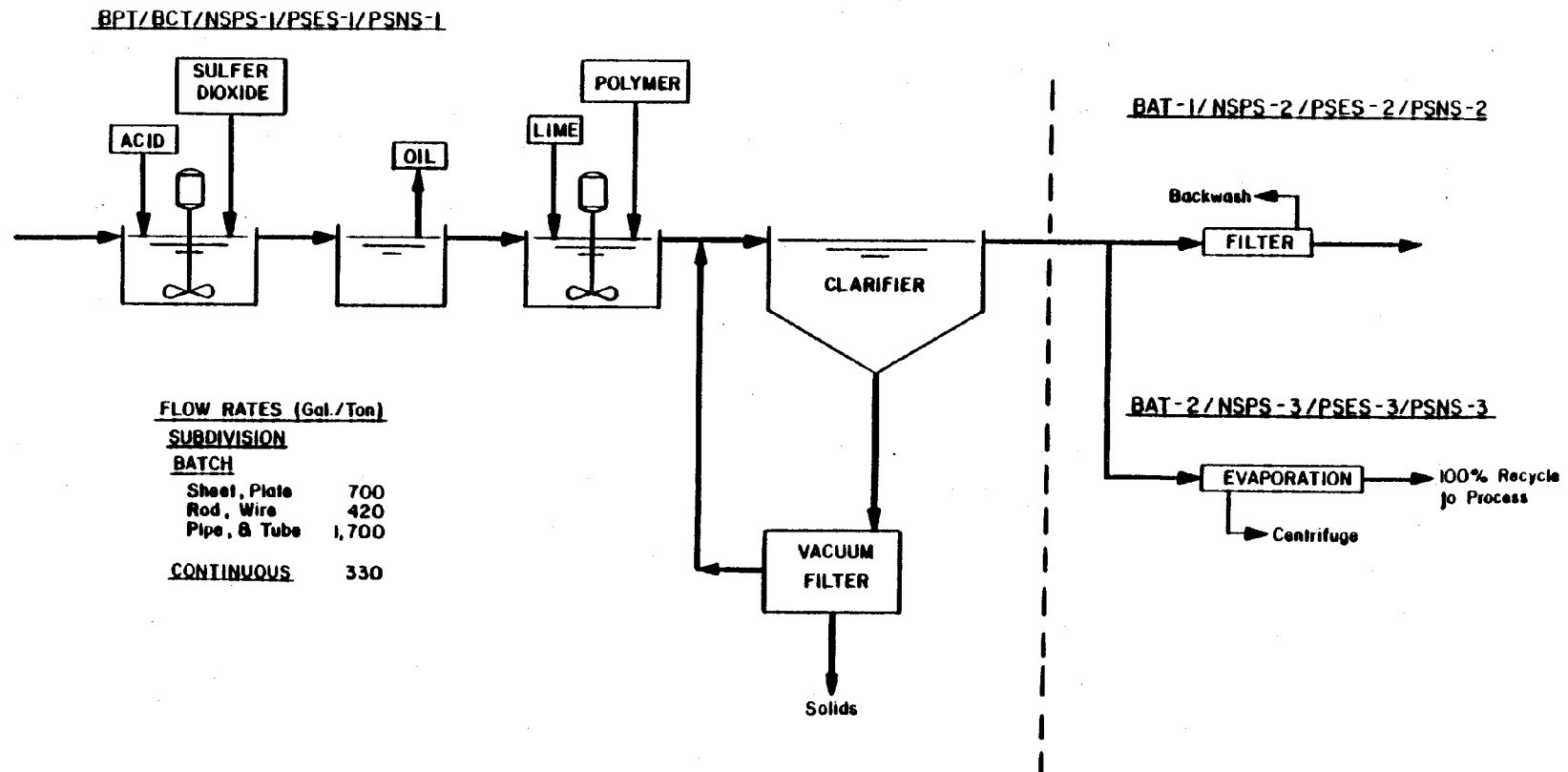
HOT FORMING NSPS/PSNS TREATMENT MODELS SUMMARY



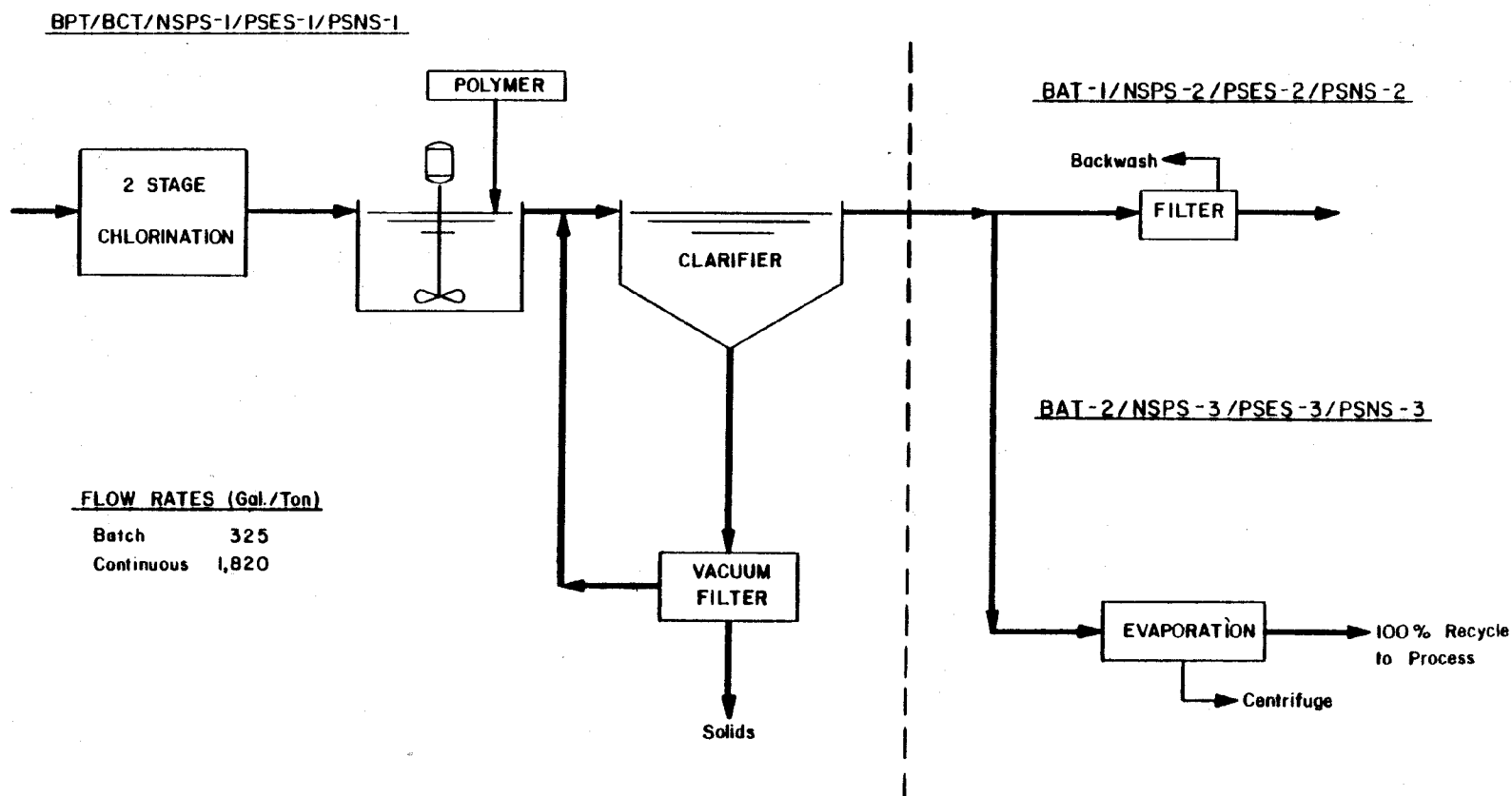
SUBDIVISION		NSPS FLOW RATES		
		APPLIED FLOW(GPT)	COMBINED RECYCLE RATE(%)	DISCHARGE FLOW (GPT)
PRIMARY	wo/scarfer	2300	96	90
	w/scarfer	3400	96	140
SECTION	Carbon	5100	96	200
	Specialty	3200	96	130
FLAT	Hot Strip	6400	96	260
	Carbon Plate	3400	96	140
	Specialty Plate	1500	96	60
PIPE & TUBE		5520	96	220

SALT BATH DESCALING OXIDIZING TREATMENT MODELS SUMMARY

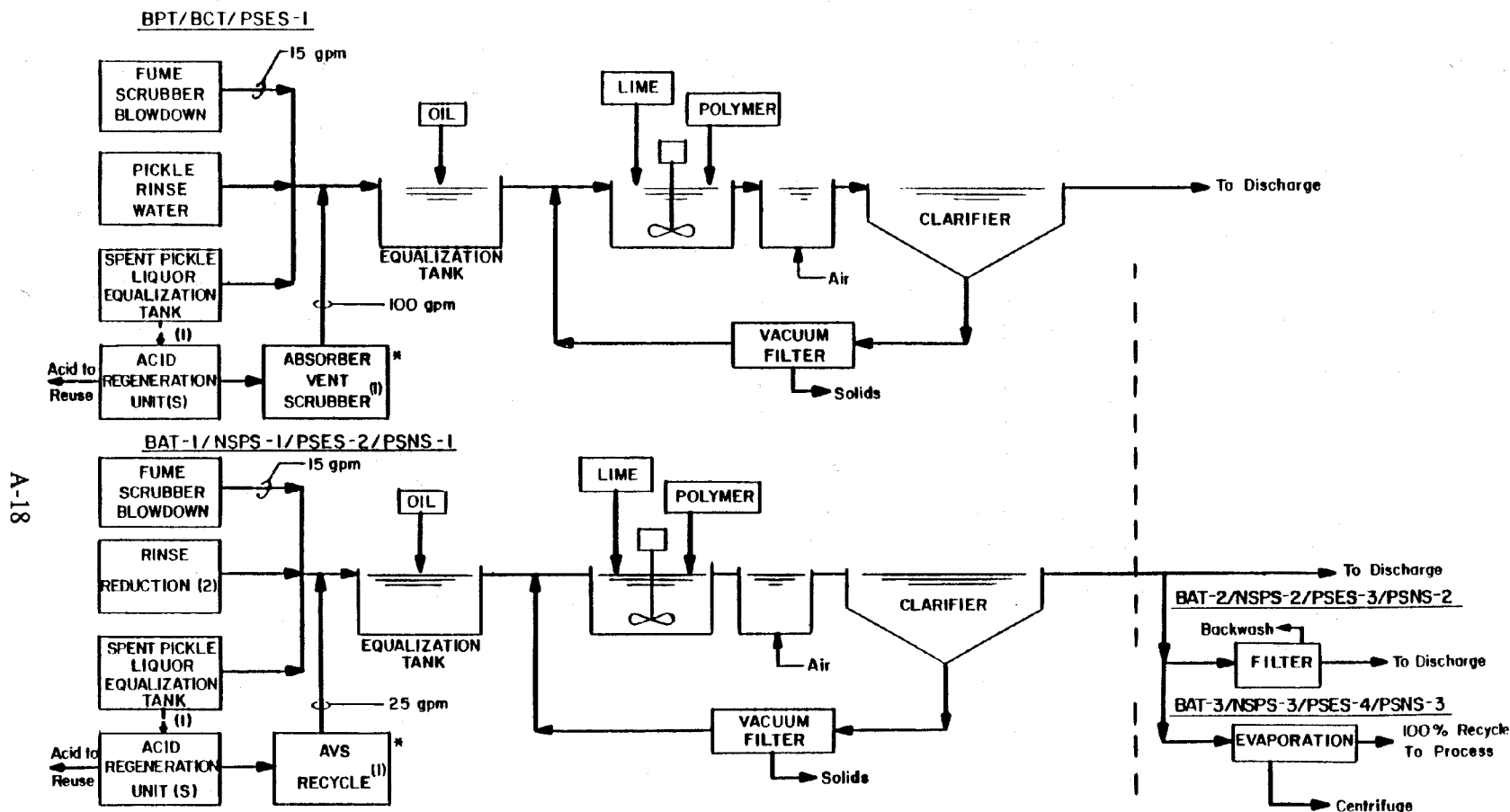
A-16



SALT BATH DESCALING REDUCING TREATMENT MODELS SUMMARY



ACID PICKLING TREATMENT MODELS SUMMARY



A-18

(1) Hydrochloric Acid
Regeneration Systems
Only at BPT,BAT,BCT and
PSES.

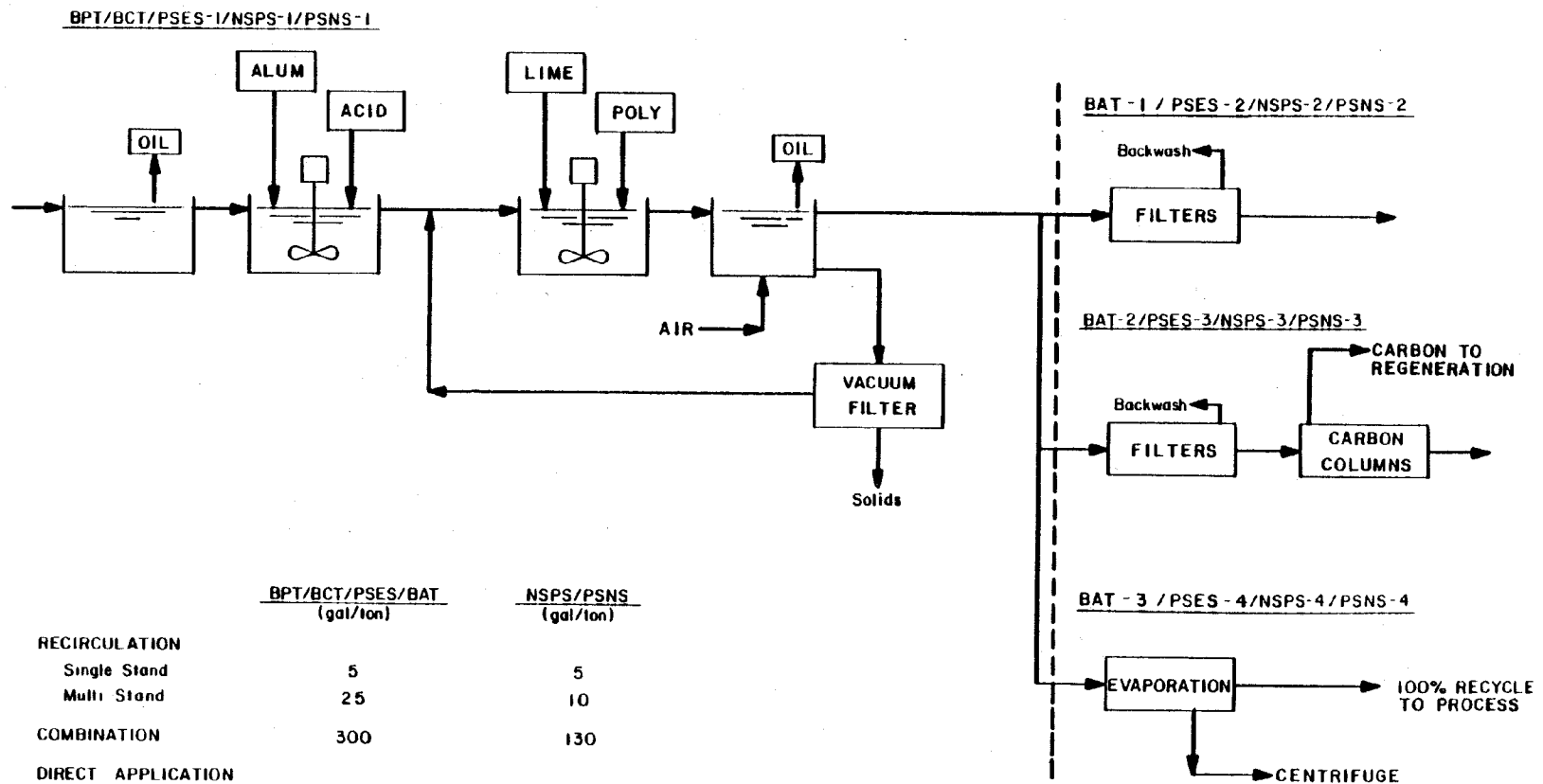
(2) Reduces Rinse Flows
by 90 %

* Replaces Spent Pickle Liquor
Allowance for Hydrochloric
Acid Regeneration System.

BPT/BCT/PSES-1 RINSEWATER FLOW RATES (gal/ton)

	SULFURIC	HYDROCHLORIC	COMBINATION
ROD/WIRE/COIL	260	480	490
BAR/BILLET/BLOOM	70	—	210
PIPE/TUBE/OTHER	480	1,010	750
STRIP/SHEET/PLATE (Cont.)	160	270	1,480
STRIP/SHEET/PLATE (Batch)	—	—	440
SPENT PICKLE LIQUOR	20	10	20

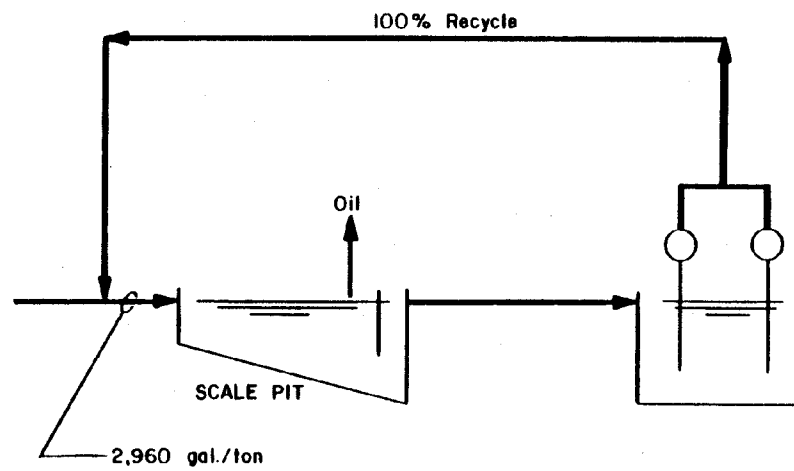
COLD FORMING: COLD ROLLING TREATMENT MODELS SUMMARY



	<u>BPT/BCT/PSES/BAT</u> (gal/ton)	<u>NSPS/PSNS</u> (gal/ton)
RECIRCULATION		
Single Stand	5	5
Multi Stand	25	10
COMBINATION	300	130
DIRECT APPLICATION		
Single Stand	90	25
Multi Stand	400	290

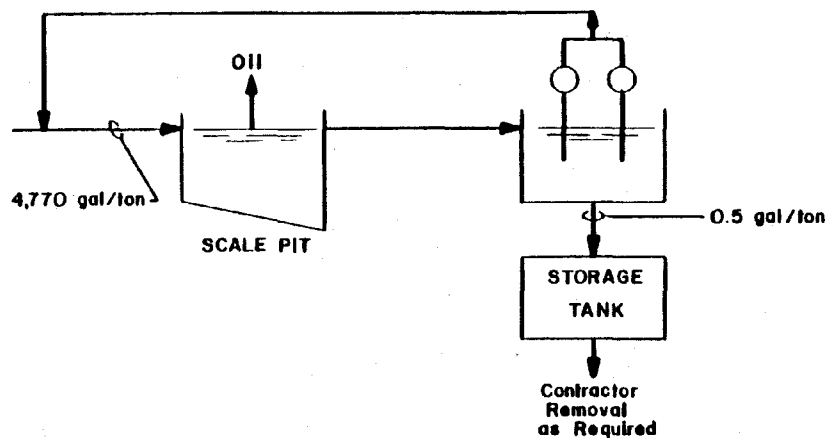
COLD FORMING
PIPE AND TUBE (WATER)
TREATMENT MODEL SUMMARY

BPT/BAT/BCT/PSES/PSNS/NSPS



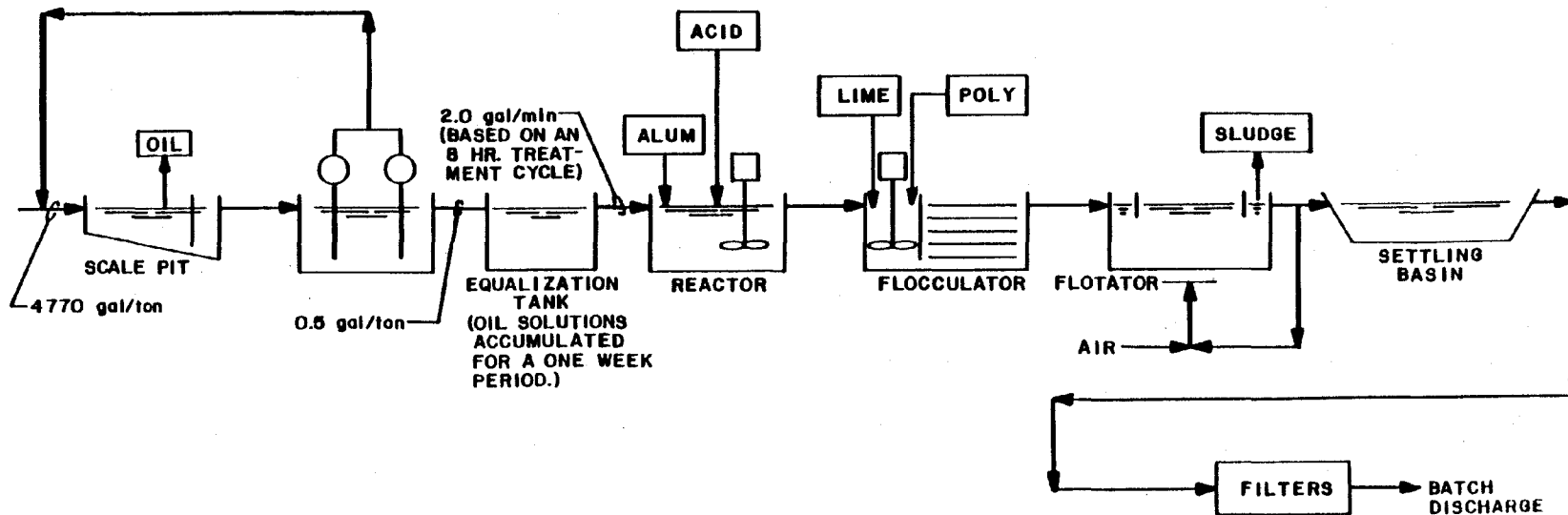
**COLD FORMING
PIPE AND TUBE (SOLUBLE OIL)
TREATMENT MODELS SUMMARY**

BPT/BAT/BCT/PSES/PSNS-1/NSPS-1

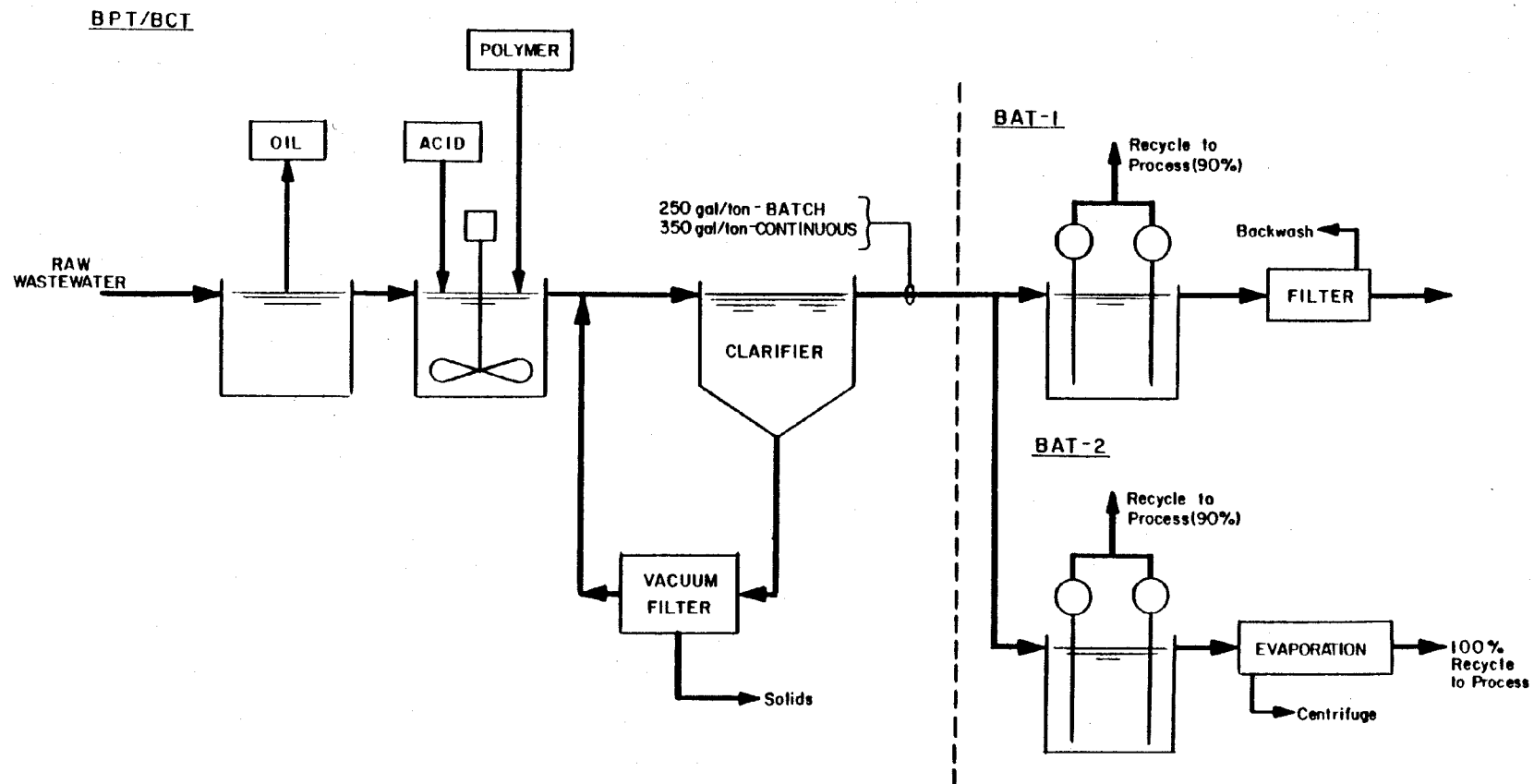


A-21

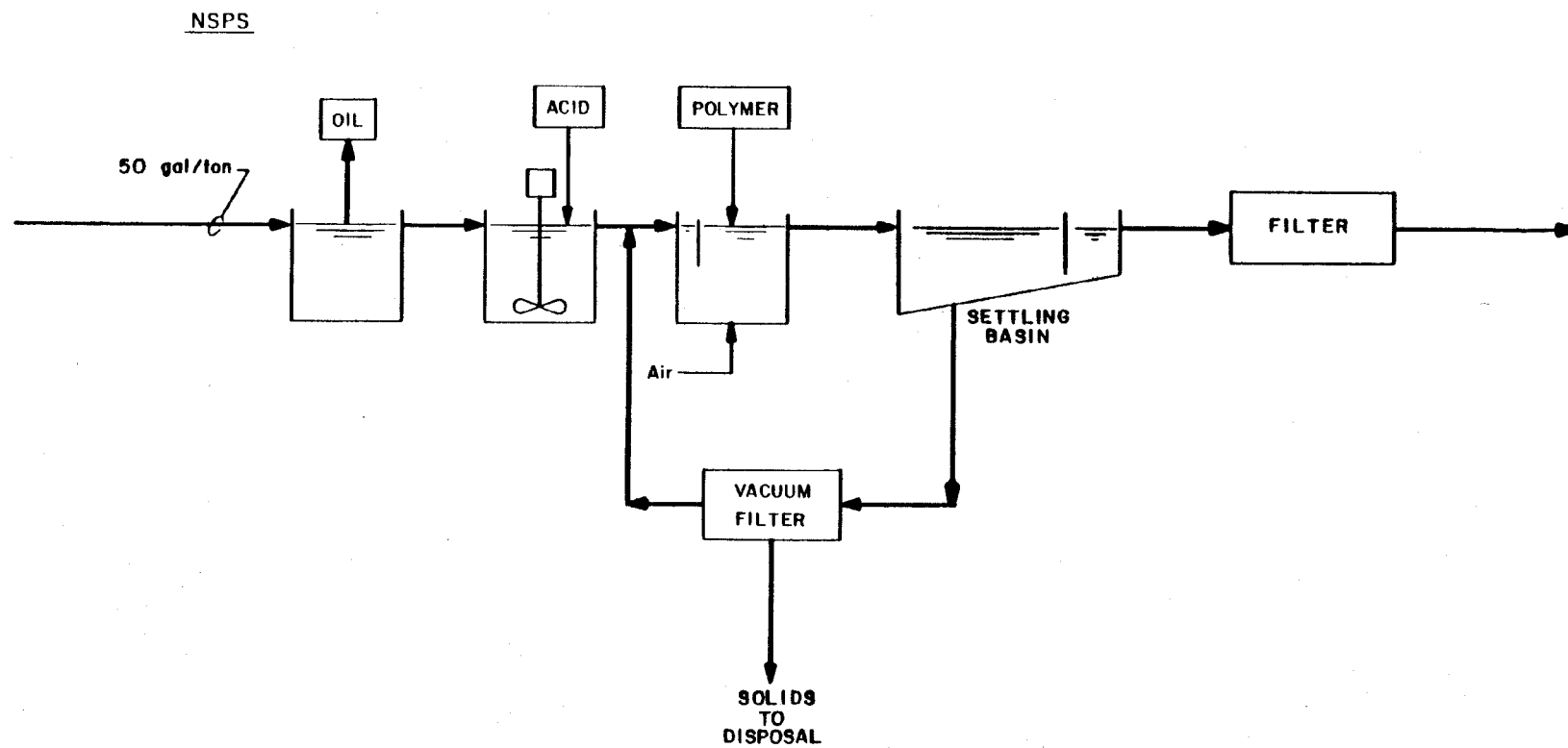
PSNS-2/NSPS-2



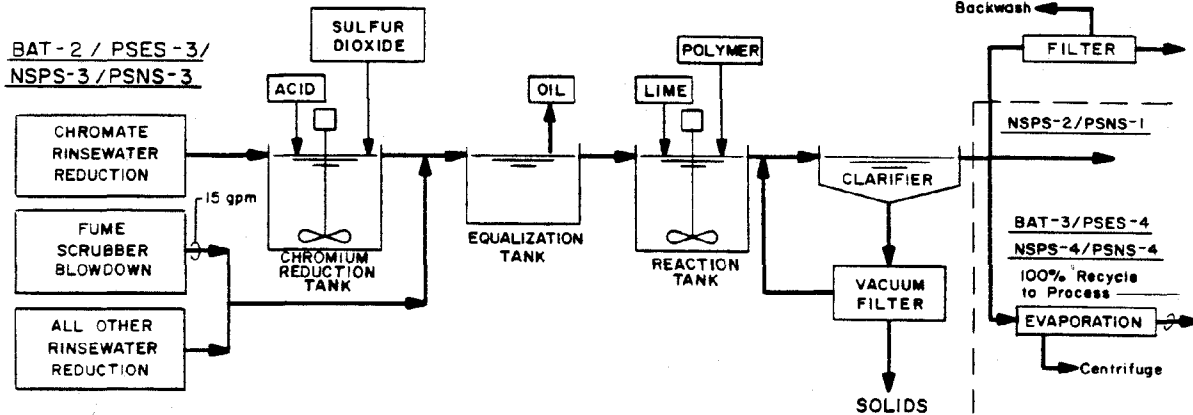
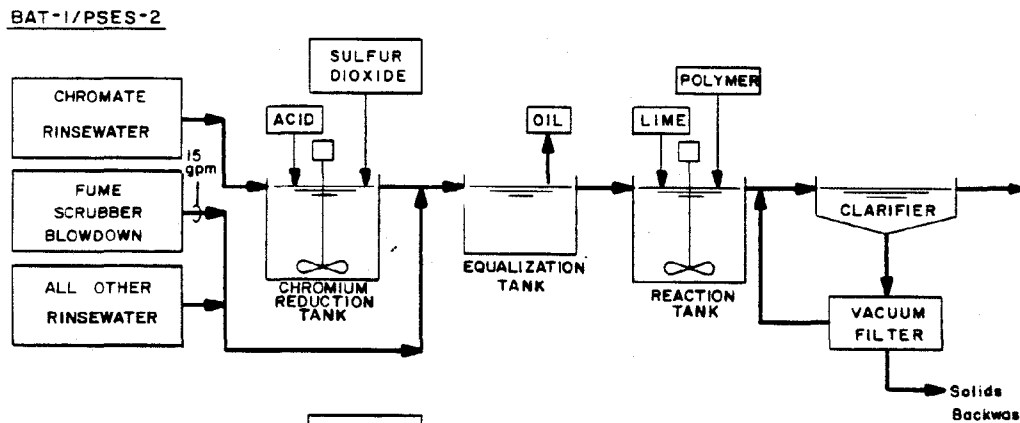
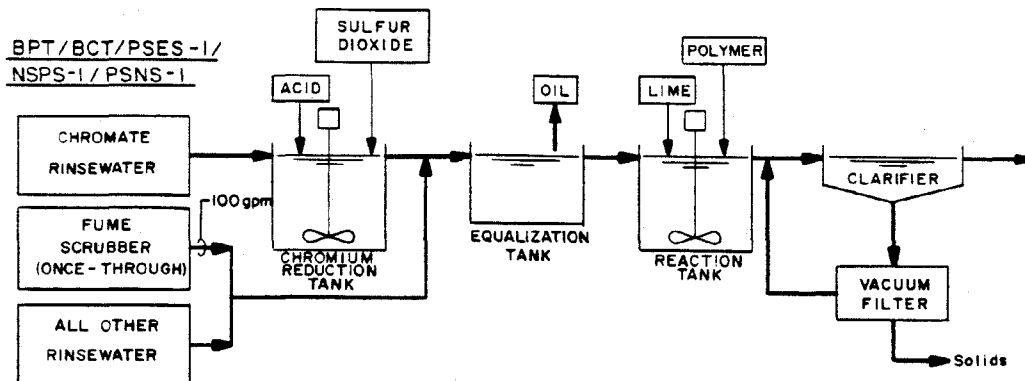
ALKALINE CLEANING
BPT/BCT/BAT
TREATMENT MODELS SUMMARY



ALKALINE CLEANING
NSPS
TREATMENT MODELS SUMMARY



HOT COATING / GALVANIZING TREATMENT MODELS SUMMARY



HOT COATING RINSE WATER FLOW RATES (GPT)

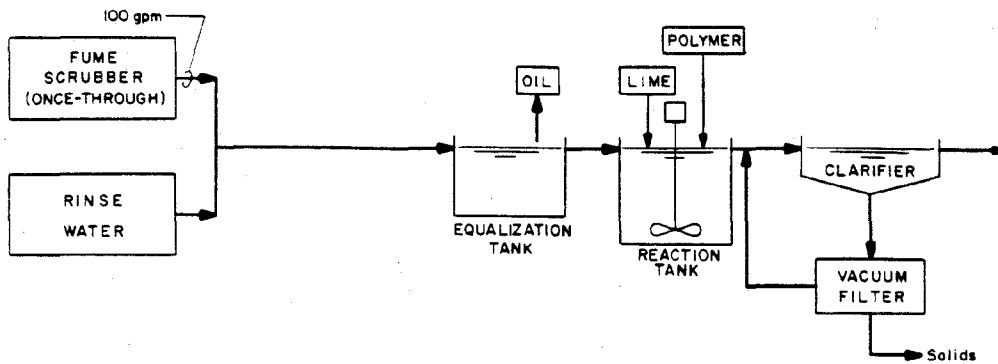
PRODUCT	BPT/BCT/PSES-1 & 2 BAT-1/NSPS-1/PSNS-1 (1)	ALL OTHER MODELS (2)
Strip / Sheet & Misc. Products	600	150
Wire Products & Fasteners	2400	600

(1) Fume scrubber flow at BPT/BCT/PSES-1/NSPS-1/PSNS-1: 100 gpm/scrubber

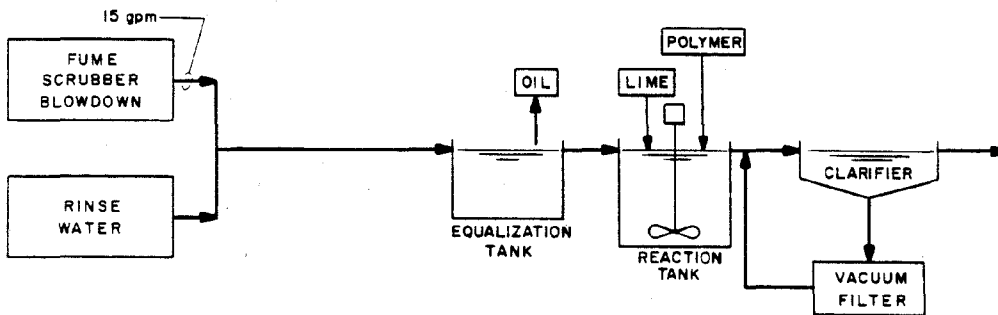
(2) Fume scrubber flow at all other models: 15 gpm/scrubber

HOT COATING/TERNE & OTHER METALS TREATMENT MODELS SUMMARY

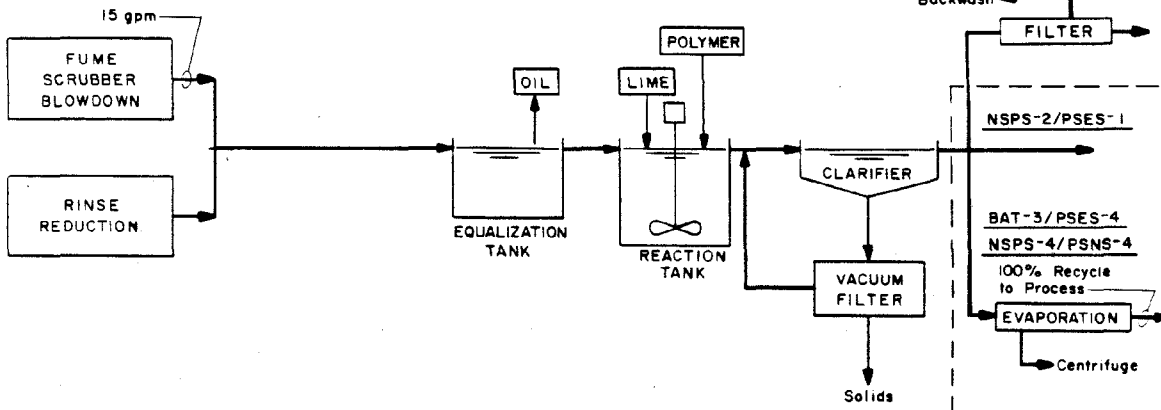
BPT/BCT/PSES-1/
NSPS-1/PSNS-1



BAT-1/PSES-2



BAT-2 / PSES-3/
NSPS-3 / PSNS-3



HOT COATING RINSE WATER FLOW RATES (GPT)

PRODUCT	BAT/BCT/PSES-1&2/ BAT-1/NSPS-1/PSNS-1 ⁽¹⁾	ALL OTHER MODELS ⁽²⁾
Strip/Sheet & Misc. Products	600	150
Wire Products & Fasteners	2400	600

(1) Fume scrubber flow at BPT/BCT/PSES-1/NSPS-1/PSNS-1: 15 gpm/scrubber

(2) Fume scrubber at all other models: 15 gpm/scrubber